

Castlemaine Naturalist

July 2024

Vol. 49.6 #532

Monthly newsletter of the
Castlemaine Field Naturalists Club Inc.



A juvenile Rosenberg's Goanna
photo by Matthew Higgins

Have you underestimated goannas?

Our speaker at our June meeting was Dr Don Fletcher, an ecologist who has spent many years working in the ACT and, now retired, is volunteering for the National Parks Association, ACT and the Invasive Species Council. Don spoke about one of his long-term projects studying the ecology of Rosenberg's Goanna, *Varanus rosenbergii*. The eastern population which occurs in NSW and the ACT is classified as Vulnerable. It is rare in the ACT.

Don started by telling us how smart they are. Maze experiments have shown that they can remember routes in a maze over several years while other tests have shown an ability to recognise quantities (i.e. count) up to six.

The female lays her eggs in the nest of a Gluegun (or Snouted) Termite, *Nasutitermes exitiosus*, around February and then seals the nest chamber. This is a rare case of parasitism by a vertebrate on an invertebrate species. The eggs are not eaten by the termites so are fairly safe in the mound and the female will guard against male goannas that may prey on the nest. The young emerge from the nest chamber around October but continue to use it for shelter for a few weeks after emerging and will forage and bask in the sun nearby. The young will also prey on their termite hosts. At this stage the young are very vulnerable and are preyed on by foxes, cats and raptors as well as male goannas who may be in the area. If they survive their first year individuals can live for more than 30 years.

An advantage when studying these animals is that individuals are recognisable by the pattern of light and dark scales on the side of their face. This makes it possible to use motion-detecting wildlife cameras to record and identify individuals of this cryptic species which is important

when populations are very low. With sufficient records, camera traps may be used to obtain an estimate of population size.

Don's work has also involved the use of radio-tracking. 'Backpack' GPS recorders have been developed and fitted to the base of the tail of some individuals. The recorders can upload data to the mobile receiver avoiding the need to recapture the animals to obtain the data. The backpacks are designed to dislodge easily so that the animal does not get trapped by them which is important for an animal that spends much of its time in hollows underground. The GPS recorders remained on the animals for around 6 months.

The main study area was in the Naas and Murrumbidgee Valleys south of Canberra. Some of the key findings from the study were:

- Individuals occupy the same home range for years
- Females tend to stay close to home at lower altitudes in the Murrumbidgee Valley
- Some males migrate to higher altitudes in the Naas Valley where they spend most of the year. The distance involved is up to 12km and involves climbing a pass then descending to the next valley.
- Migrating males return to the Murrumbidgee Valley for mating.
- Tracks followed by the males are consistent over a number of years indicating that they remember their route.

Rosenberg's shelter in holes and tunnels. They will make use of rabbit burrows or holes under rocks as temporary accommodation. Hibernation (winter) burrows are always under rocks and dug by the goanna. These burrows are more complex, may be 6-8m long with branched tunnels and a basking platform near the entrance. The use of holes in the ground for shelter is important for survival during bushfires. Rosenberg's are better able to survive fire than Lace (Tree) Goannas which occur in many of the same places but use hollow logs and trees for temporary shelter and tree hollows for hibernation.

Following floods in 2021/22 when the Naas Valley became inaccessible the study moved to Mt Majura and Mt Ainslie, close to Canberra city where there is a small, c10 individuals, population of Rosenberg's which is now being monitored.

Rosenberg's Goanna are rare in the ACT except in the Naas Valley although they were not recorded there for decades prior to 2005. Their resurgence is attributed to the canid baiting that has occurred there since 2010. Fox control is seen as vital for the survival of both goannas in this region. Domestic dogs may also be a factor in their decline and road kill may be important near urban areas and roads may restrict the area of

available habitat. It is unclear whether dingos are a factor in their decline as Rosenberg's and dingos occupied the same habitat for millennia prior to the introduction of foxes.

Thank you Don for an enthralling talk that covered recovery efforts for a threatened species using mainly volunteers and showed how modern technology can help our understanding of a species ecology.

- Euan Moore



Above: Like a fingerprint, the scale pattern on the face of each individual is unique.
Photo: Euan Moore

Cover photo - Newly hatched Rosenberg's Goanna at the entrance to the nest chamber in a termite mound, Mt Ainslie, Canberra. Photo: Matthew Higgins

CFNC Excursion, 15 June 2024 – “Fungi Search with Joy Clusker”

On a brisk June winter morning, a large group of CFNC members and visitors assembled at Leonards Hill to explore the nearby forests for fungi under the expert guidance of Joy Clusker. Following a rather dry autumn season, the fungi were still sparse in our nearby forests, so Joy recommended travelling to the cooler and damper forests south of Daylesford. With the added bonus of some recent showers of rain, we were not disappointed – a whopping 55 species of fungi were seen on the day!

We started in the morning in the magnificent tall eucalypt forest of the Wombat State Forest along Gambles Lane, where we hardly took a step before the amazing array of different forms and colours of fungi were seen. Joy pointed out the distinctive features to look for to help with their identification – gills under the cap or not (small mirrors proved invaluable for this test), the colour of any gills, stipe (stem) or not, size, colour and texture, and importantly the substrate that the fungus was growing on. Most species were found on rotting wood and leaf litter but others were associated with tree roots, soil or animal dung. There was even a species growing on another fungal species! These different substrates reflect how fungi derive their sustenance, whether Saprophytic, Parasitic or Symbiotic. We will hear more about how Symbiotic or mycorrhizal fungi communicate with plants at our July meeting.

Examples of the three major groups of fungi were seen, with many species of Basidiomycota or gilled fungi as well as examples of Zygomycota such as moulds

and Ascomycota. Ascomycota typically shoot their spores into the air from flask-like structures called asci, although the brilliant Orange Peel example that we found didn't release spores when puffed on, presumably due to its dampness or age.

After a welcome warming cuppa and lunch at Sailors Falls, we moved back further south to a second area of the Wombat State Forest which again had fortunately not been subjected to the recent destructive "salvage logging" occurring in other parts of that forest. Here we could see again the important role of fungi in returning the nutrients of fallen vegetation back to the soil, with many fungi species seen, a few shared with the morning's list but many others new. Overall we had 34 species in the morning and 25 in the afternoon.

We thank Joy enormously for her enthusiastic skills in guiding us to some excellent fungal hot-spots and opening our eyes and minds to the fascinating world of fungi diversity and beauty as well as to their critical roles in maintaining our precious natural environments.

- Readers are referred to Joy's excellent guide book: "Fungi of the Bendigo Region – a Guide to their Identification" by Joy Clusker and Ray Wallace, 2nd edition, 2022. This book is available from Joy directly joyclusker@icloud.com or from Stoneman's Book shop in Castlemaine or on the Fungimap website.
- Joy also urges photographers to post their photos on the iNaturalist website and link them to the Fungimap Project which you must join first. Here you can get help with your fungi identification, but your sighting will also aid mapping of fungi distribution and hence with their conservation.
- Joy uses 'Index Fungorum' to check on current names and name changes.

You can see photos of some of the fungi that were found by our group on this excursion using the iNaturalist link:

https://inaturalist.ala.org.au/observations?nelat=37.39395922751324&nelng=144.21176248521567&on=2024-06-15&place_id=any&swlat=37.468113928569856&swlng=144.10533243150473&iconic_taxa=Fungi

Jenny Rolland



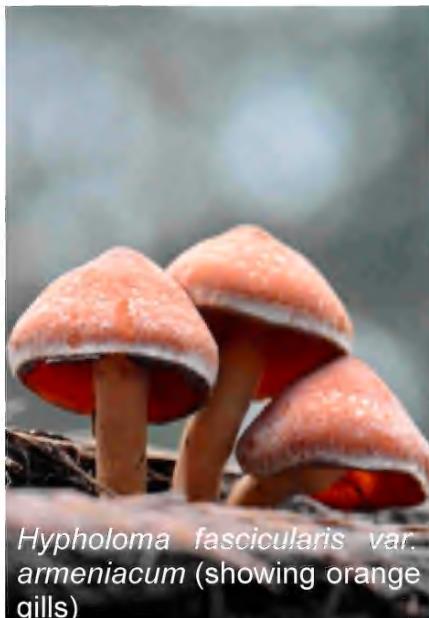
Getting up close - Helen Lawrence and Joy Clusker

Right: Joy's enthusiasm was infectious!



Photos by Lou Citroen

Some of the finds on the day



Hypoloma fascicularis var. *armeniaca* (showing orange gills)



Mycena interrupta



Mycena subgalericulata

Photos above and below by Joy Clusker



Marasmiellus affixus



Trametes versicolor

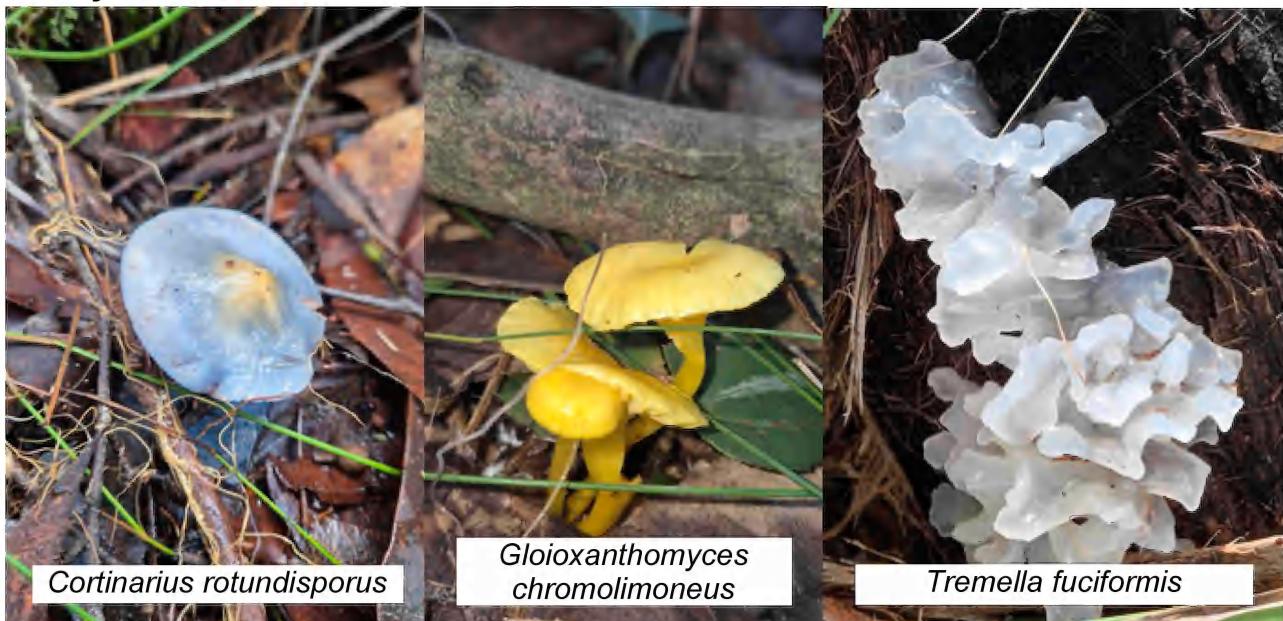


Above: Helen Lawrence at work
photo by Lou Citroen



Clues from below
photo by Helen Lawrence

Jenny Rolland



Yvonne Hsu



Euan Moore



Lou Citroen



Lisa Hewitt



Coprinopsis Sect Canocipes



Fistulina spiculifera

Jill Williams



Mycena sp.

Noel Young



Hymenotorrendiella clelandii



Aleuria aurantia



Heterotextus peziziformis



Hypholoma brunneum



Psilocybe subaeruginosa

List of fungi noted on the June excursion

Scientific name	Common name	AM	PM
<i>Aleuria aurantia</i>	Orange Peel		x
<i>Aleurodiscus sparsus</i>			x
<i>Artomyces colensoi</i>		x	
<i>Calocera sinensis</i>	Pretty Horn	x	
<i>Clavulinopsis sulcata</i>	Flame Fungus		x
<i>Collybia eucalyptorum</i>		x	
<i>Coprinellus disseminatus</i>			x
<i>Cortinarius salmaster</i>		x	
<i>Cortinarius abnormis</i>			x
<i>Cortinarius rotundisporus</i>		x	
<i>Crepidotus nephrodes</i>		x	
<i>Dictyopanus pusillus</i>	Ping Pong Bats	x	
<i>Fistulina spiculifera</i>	Beef Steak		x
<i>Gymnopilus allantopus</i>		x	
<i>Heterotextus peziziformis</i>	Golden Jelly Bells	x	
<i>Hygrocybe chromolimonea</i>		x	
<i>Hygrocybe miniata</i>		x	
<i>Hymenotorrendiella clelandii</i>			x
<i>Hypholoma australe</i>			x
<i>Hypholoma brunneum</i>			x
<i>Hypholoma fasciculare</i> var. <i>fasciculare</i>			x
<i>Hypholoma fasciculare</i> var. <i>armeniacum</i>			x
<i>Hypocrea</i> aff. <i>megalosulphurea</i>			x
<i>Laccaria laccata</i>			x
<i>Lactarius eucalypti</i>			x
<i>Lactarius</i> aff. <i>piperatus</i>		x	
<i>Lanzia lanaripes</i>	Black Tacks	x	x
<i>Lentinellus pulvinulus</i>		x	x
<i>Lepiota haemorrhagica</i>			x
<i>Lichenomphalia umbellifera</i>		x	
<i>Macrolepiota clelandii</i>		x	
<i>Marasmiellus</i> sp.		x	
<i>Marasmius affixus</i>			x
<i>Marasmius crinis-equi</i>	Horse Hair Fungus		x
<i>Mycena</i> sp.		x	
<i>Mycena cystidiosa</i>		x	
<i>Mycena interrupta</i>	Pixie's Parasol	x	
<i>Mycena kuurkacea</i>			x
<i>Mycena nargan</i>		x	
<i>Mycena pitereka</i>		x	x
<i>Mycena subgalericulata</i>		x	
<i>Neobarya agaricicola</i>		x	
<i>Omphalina umbellifera</i>		x	
<i>Panaeolus</i> sp.		x	
<i>Pholiota communis</i>		x	
<i>Podoscypha petalodes</i>			x
<i>Psilocybe subaeruginosa</i>	Magic Mushroom	x	
<i>Ramaria capitata</i> var. <i>capitata</i>	Coral Fungus	x	
<i>Russula clelandii</i>		x	
<i>Sphaerobolus stellatus</i>	Cannon Ball Fungus	x	
<i>Stereum illudens</i>			x
<i>Stropharia semiglobata</i>		x	
<i>Trametes versicolour</i>	Turkey Tails		x
<i>Tremella fuciformis</i>	White (Snow) Jelly	x	x
<i>Tricholoma</i> sp.		x	

A total of 55 species. Thanks to Joy and her scribe Cathrine for this spectacular result!

Observations

Euan Moore

Bassian Thrush. A pair were seen in a gully on the eastern side of Mt Alexander near the old koala park. These are an occasional visitor to our area more common in wetter forests to the south and east.



Bird-of-paradise Fly, *Callipappus* sp. Not really a fly but a relative of bugs, hoppers and aphids. Observed near Douglas in western Victoria but may occur locally. (The squares in the fabric are approx. 4mm.)

Swift Parrots in Mt Alexander Shire

Debbie Worland recently witnessed the presence of the critically endangered Swift Parrot near the Muckleford golf course, estimating 10 -15 birds on June 16. On June 21 Geraldine and Geoff saw about 20 at Barkers Creek. It is wonderful to have them back as there seems to have been only records of fleeting visits in recent years. Whether they stay in a location depends on availability of food, principally Eucalyptus nectar.

The total population of Swift Parrots is estimated by ANU researchers to be now about 500. Their numbers have considerably reduced over the years in coincidence with the destruction of their breeding habitat in the Blue-gum forests of SE Tasmania by logging, and they were officially designated as Critically Endangered in 2016. They migrate to the mainland for winter where they favour Box Ironbark forests in Victoria and NSW, and may go as far as SE Qld. Drought years limit their feeding areas which, with global warming, is another threat to their survival.

Debbie took a special interest in the Swiftie and did much to raise interest in its cause, resulting in the production of a DVD [see Castlemaine Naturalist #385, March 2011]

- Noel Young

FROM THE COMMITTEE

We had somewhat contradictory activities for our June meeting and excursion, with 39 members and visitors enjoying the warmth of their own homes for the June meeting and talk by Dr Don Fletcher, then 23 hardy souls braved the very cold conditions the next day to hunt for fungi south of Daylesford. We now have 100 members, which is exactly the number we had last year, so if we get more renewals (now late!) and some new members we will exceed last year's total.

Behind the scenes many members continue to make a wonderful contribution to the Club. The Explore web page has been updated, the revised *Geological Features of the Castlemaine District* brochure has been completed (available on the Explore webpage). A brief for the revision of the *Indigenous plants of Castlemaine and surrounds* brochure is almost ready to forward to the designer, two brochures offering insight into the native street trees of Castlemaine are being prepared, scanning of our past records is well underway, a new Wiki page about the Club should soon be available and all of our past newsletters have been scanned and are now in the Biodiversity Heritage Library - (see [Castlemaine Field Naturalists Club - Biodiversity Heritage Library \(biodiversitylibrary.org\)](http://biodiversitylibrary.org))

Sincere thanks to the many people who make these things happen.

If you have comments or suggestions about any of the Club's activities please let the Committee know.

SEANA Spring Camp - Marysville, Friday 25th - Sunday 27th October, 2024 Hosted by the Ringwood FNC Inc.

The second South East Australian Naturalists' Association (SEANA) camp for this year will be held in Marysville. This is an excellent chance to meet fellow naturalists from around SE Australia and explore a new region under the guidance of local experts. The Ringwood FNC is hosting this camp and have arranged a program of half and full day events to enjoy the beautiful tall forests, gullies and waterfalls of the Marysville region.

Information and forms for this camp are available by clicking the links below.

- The [**First Notice**](#) – information about accommodation options. Early accommodation booking is recommended.
- The [**Second Notice**](#) - information about the camp, meals and excursions.
- [**Registration Form**](#) - Payment and Registration details, any dietary requirements, expressions of Interest for a guided tour of Healesville Sanctuary on Sunday 27, 2024.

Please note - Registration and payment are due by Friday August 1, 2024.

Enquiries: email: rfnccseana@gmail.com

COMING EVENTS

Monthly Meeting: Friday 12th July, 7.30pm by Zoom
Speaker: Assoc. Prof Jonathan Plett (Western Sydney University)
“Translating the Language of Mycorrhizal Fungi”

Following our exciting Field trip last month where we found an incredible array of different fungi in the Wombat State Forest (see report in this newsletter), we are privileged to have A/Prof Jonathan Plett from the Western Sydney University Hawkesbury Institute for the Environment address our July monthly meeting on the topic of how fungi communicate with their host plants. Jonathan will tell us about his research to identify the protein signals that coordinate symbiosis between soil-borne mycorrhizal fungi and plants and importantly to understand the function of these signals.

He will compare two interactions: the mutualistic symbiosis between *Pisolithus* and *Eucalyptus* and the pathogenic symbiosis between *Armillaria* and *Eucalyptus*. By comparing these two systems, he will conclude with his current theories upon how mycorrhizal fungi may communicate differently with their hosts than pathogens and how perception of these different fungal “languages” by the plant impacts the ultimate fate of the interaction. The outcome of this research will be a better understanding of the biological mechanisms used by fungi that ultimately benefit plants that can be leveraged in future to mitigate the negative effects associated with climate change.

How to join the Zoom meeting – you need to **register in advance** to receive the link for joining the Zoom session. To register, please click on the following link or copy this url into your browser:

https://us06web.zoom.us/meeting/register/tZ0udOysrDltHtb_2yDWrsWUpTbH1UKRlgJI

Observations: Members and visitors are invited to share their interesting observations at the meeting. Please email any photos to illustrate your report as JPEG file(s) to **Jill Williams** (jillwill33@gmail.com) by noon on the day of the meeting.

Excursion - Saturday 13th July, 1.30pm “Street trees of Castlemaine”
Leaders - Rosemary Turner and Susan Luke

This excursion provides the opportunity to appreciate the interesting collection of trees in Goldsmith Crescent and Yandell, Forest, Kennedy and Campbell Streets. Our guides both have botanical expertise and will help us identify at least 20 different indigenous and introduced species, including several forms of Yellow Gum (*Eucalyptus leucoxylon*). Two of the trees are historically significant.

Meet: **1.30pm** at the eastern end of Yandell St where it meets Campbells Creek. There is ample parking nearby. The walk is of about 2.5 km and will start and finish at the meeting point.

Bring: Water, snacks, sturdy shoes, chairs and afternoon tea.

Disclaimer: The opinions expressed in this newsletter are those of the contributors and not necessarily those of the club

Castlemaine Field Naturalists Club

PROGRAM

Monthly meetings are being held on-line via Zoom again during the winter months (June, July and August) commencing at 7.30pm. Please register in advance (see "Coming Events" page) to receive the link for joining the meeting.

Members and visitors are invited to share their interesting observations at these meetings. Please email any photos to illustrate your report as JPEG file(s) to **Jill Williams** (jilliwill33@gmail.com) by noon on the day of the meeting.

See "Coming Events" page for more details about July events.

Fri July 12th, Meeting 7.30pm (by Zoom). Guest speaker: A/Prof Jonathan Plett (W Sydney Uni) "Translating the language of mycorrhizal fungi".

Sat July 13th, Excursion 1.30pm "Street Trees of Castlemaine". Leaders: Rosemary Turner and Susan Luke.

Fri Aug 9th, Meeting 7.30pm (by Zoom). Guest speaker: Reece Pianta (Invasive Species Council) "Fire ants – threats and eradication".

Sat Aug 10th, Excursion 1.00pm "Restoring leaky landscapes", Spring Plains, Heathcote (Biolinks Alliance project).

Visitors are welcome at club activities

Castlemaine Naturalist - email newsletter material to: newsletter.cfnc@gmail.com

*Deadline for the August edition is 26th of July.

Subscriptions for 2024 (Membership forms on CFNC website, fees due by 1st April)

Ordinary membership: Single \$35, Family \$50

Pensioner or student: Single \$25, Family \$30

Subscription includes the monthly newsletter, Castlemaine Naturalist

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